

# SUCCESS STORY: BOOSTER RECOMMISSIONING

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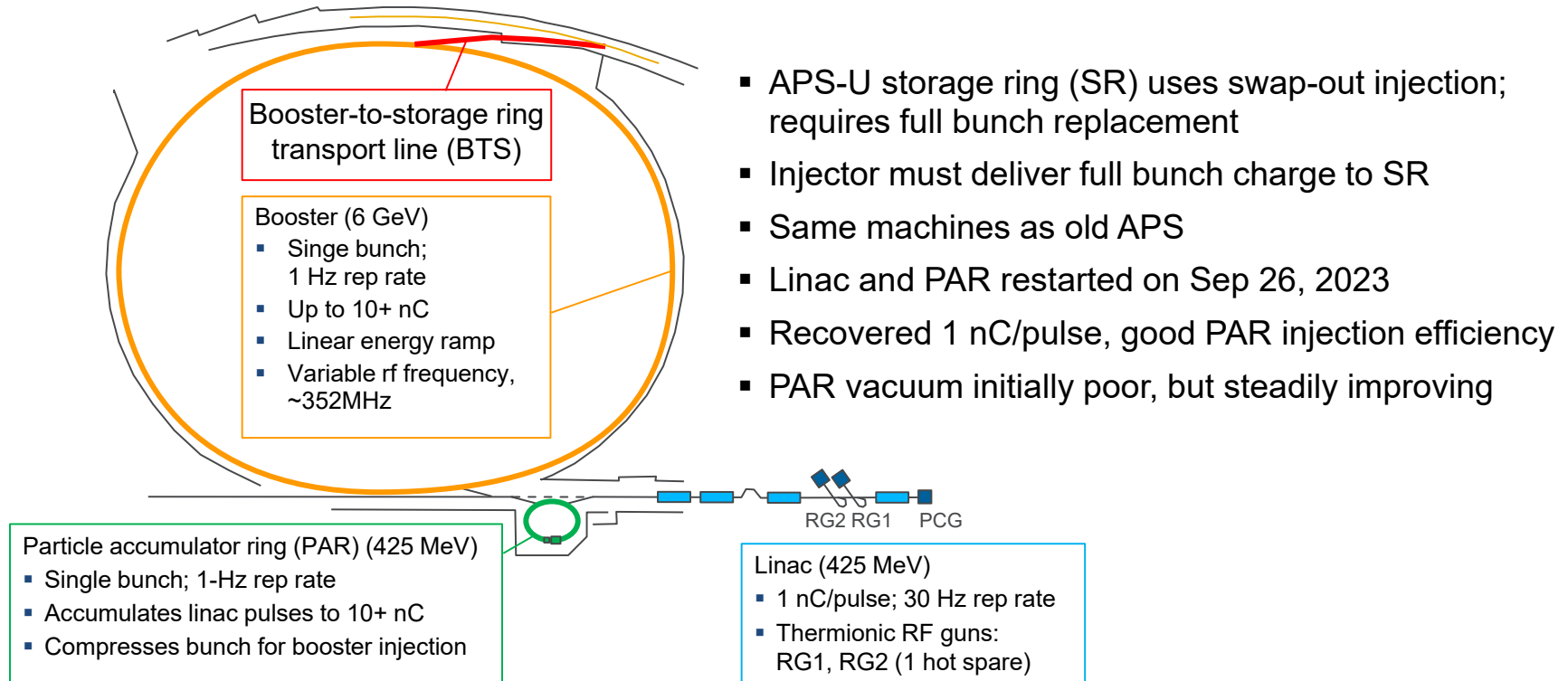


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# APS-U INJECTOR CHAIN



# INJECTOR UPGRADES

**New storage ring slightly smaller → PAR, booster, and SR operate at different RF frequencies**

- New timing system for injection into booster and SR
- Target SR bunches for swap-out via small frequency variations in the booster

## Injector updates include

- Linac: higher power klystron, new RF guns, faster correctors
- PAR: high power RF amplifier, improved kicker chambers
- Booster: New sextupole power supplies, better photon diagnostics, improved orbit control
- BTS: new magnet power supplies and beam position monitors



PAR kicker chamber with innovative Ti coating



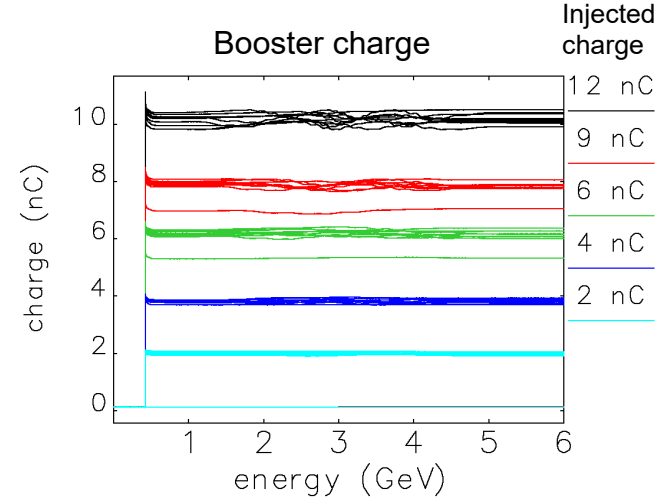
Injection/extraction timing and synchronization system (IETS)



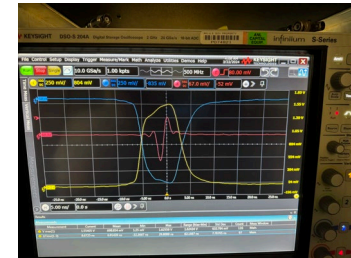
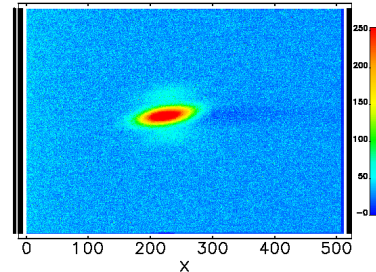
50-MW K2 klystron and modulator

# BOOSTER RE-COMMISSIONING

- Booster re-started on February 12, 2024
- Demonstrated injection and acceleration to 6 GeV
- Tuned for good injection efficiency, charge stability
- Tested new timing system
- Captured 10 nC in booster!
- Demonstrated 1 nC extraction
- Set up timing for SR injection kickers
- Ready for storage ring commissioning!



Beam image on  
fluorescent  
screen in BTS



SR injection  
kicker timing